Immunization and RSV/Palivizumab Clinic Update

Advances in preventative care for our pediatric population

Immunization Update

- The ever changing quagmire of pediatric immunization schedules
- Changes and clarifications for the 2000-2001 immunization recommendations for Evans Army Community Hospital

Basic Immunization Overview

- Hepatitis B initial vaccination to be given at birth
- Prevnar (pneumococcal conjugate vaccine) currently in use starting at 2 months, soon to be expanded
- Selective PPD skin testing

Current Immunization Schedule

Birth	2 Months	4 Months	6 Months	12 Months	18 Months	4-6 Yrs.	11-12 Yrs.
Hep B 1	DTaP 1 IPV 1 Comvax 1 Prevnar 1	DTaP 2 IPV 2 Prevnar 2	DTaP 3 IPV 3 Comvax 2 Prevnar 3	MMR 1 Prevnar 4 PediVax Hib (#3) Varivax PPD*	DTaP 4 (Varivax)	DTaP 5 IPV 4 MMR 2 PPD*	Td (MMR 2) (Hep B series)

*PPD only as clinically required or as required by day care programs or school

Hepatitis B changes

- Current AAP, ACIP and CDC recommendations encourage changing back to thimerisol-free Hepatitis B at birth for all infants
- Comvax (Hib and Hep B) will be given at 2 months and 6 months
- PediVax Hib at 12 months will provide the third and final Haemophilius influenza B immunization

Prevnar Addition

- **Prevnar (pneumococcal 7-valent conjugate vaccine) has been added to the routine immunization schedule for all 2 month olds**
- **Catch-up immunizations for other age groups will be initiated at the start of the new year…based on vaccine availability**

Current Prevnar Recommendations

VACCINE SCHEDULE FOR INFANTS AND TODDLERS			
Dose 1	**Dose 2**	**Dose 3**	**Dose 4**
2 Months	4 Months	6 Months	12-15 Months
May be given as early as 6 weeks	Dosing interval is 4-8 weeks		Should be given at least 2 months after third dose

VACCINE SCHEDULE FOR UNVACCINATED CHILDREN ≥ 7 MONTHS OF AGE		
Age at first dose	**Total doses**	**Dosing information**
7-11 Months	3	2 doses at least 4 wks apart, 3rd dose after 12 months of age and 2 months after 2nd dose
12-23 Months	2	2 doses at least 2 months apart.
≥ 24 Months to 9 years	1	One dose

*PPD only as clinically required or as required by day care programs or school

Tuberculin Skin Testing

The TST is the only practical tool for diagnosing tuberculosis infection in asymptomatic persons. The Mantoux test containing 5 tuberculin units (TU) of purified protein derivative (PPD), administered intradermally, is the recommended TST. Other strengths of Mantoux skin tests (1 or 250 TU) should not be used. Multiple puncture tests are not recommended because they lack adequate sensitivity and specificity.

Tuberculin Skin Testing

The AAP recommends a TST for children who are at increased risk of acquiring tuberculosis infection and disease. Routine TST administration, including school-based programs that include populations at low risk, that has either a low yield of positive results or a large number of false-positive results represents an inefficient use of health care resources. Children without risk factors, including children who are younger than 1 year of age, do not need routine TSTs.

Tuberculin Skin Testing

- Previous immunization with bacille Calmette-Guérin (BCG) is not a contraindication to TST skin testing.
- Current guidelines from the CDC, American Thoracic Society, and the AAP accept 15 mm or greater of induration as a positive TST result for any person. Interpretation of 5 mm or more or 10 mm or more induration from a TST is outlined in the Red Book.

Children for whom immediate TST is indicated:

- Contacts of persons with confirmed or suspected infectious tuberculosis; including children identified as contacts of family members or -associates in jail or prison during the last 5 years
- Children with radiographic or clinical findings suggesting tuberculosis disease
- Children immigrating from endemic countries
- Children with travel histories to endemic countries and/or significant contact with indigenous persons from such countries

Children who should have annual TST :

- Children infected with HIV or living in household with HIV-infected persons.
- Incarcerated adolescents

Children who should be tested every 2–3 years:

- Children exposed to the following persons: HIV-infected, homeless, residents of nursing homes, institutionalized adolescents or adults, users of illicit drugs, incarcerated adolescents or adults, and migrant farm workers; foster children with exposure to adults in the preceding high-risk groups are included

Considerations for TST at 4–6 and 11–16 years of age:

- Children whose parents immigrated (with unknown TST status) from regions of the world with high prevalence of tuberculosis; continued potential exposure by travel to the endemic areas and/or household contact with persons from the endemic areas (with unknown TST status) should be an indication for a repeated TST
- Children without specific risk factors who reside in high-prevalence areas

Interpretation of TST Results:

Induration >5 mm

- Children in close contact with known or suspected contagious cases of tuberculosis disease:
  - Households with active or previously active cases if treatment cannot be verified as adequate before exposure, treatment was initiated after the child's contact, or reactivation of latent tuberculosis infection is suspected

Interpretation of TST Results:

Induration >5 mm

- Children suspected to have tuberculosis disease:
  - Chest radiograph consistent with active or previously active tuberculosis
  - Clinical evidence of tuberculosis disease†
- Children receiving immunosuppressive therapy‡ or with immunosuppressive conditions, including HIV infection

Interpretation of TST Results:

Induration >10 mm

- Children at increased risk of disseminated disease:
  - Young age: younger than 4 years of age
  - Other medical conditions, including Hodgkin disease, lymphoma, diabetes mellitus, chronic renal failure, or malnutrition

Interpretation of TST Results:

Induration >10 mm

- Children with increased exposure to tuberculosis disease:
  - Born or whose parents were born in high-prevalence regions of the world
  - Frequently exposed to adults who are HIV-infected, homeless, users of illicit drugs, residents of nursing homes, incarcerated or institutionalized persons, and migrant farm workers
- Travel and exposure to high-prevalence regions of the world

Interpretation of TST Results:

Induration >15 mm

- Children 4 years of age or older without any risk factors

Treatment of latent tuberculosis infection

- Isoniazid daily for 9 months
- Other regimens as noted in the Red Book

RSV/Palivizumab Clinic Update

Advances in preventative care for our pediatric population

Respiratory Syncytial Virus Epidemiology

- 100% of infants by 2 yrs infected with RSV
- 40 % of infants with bronchopulmonary dysplasia (BPD) hospitalized with RSV by 1 year old
- 90,000 hospitalizations with 2% (4,500) deaths annually
- Risk of development of asthma after RSV infections

Prior Treatment Options

- Mostly supportive with oxygen supplementation and respiratory assistance
- Antiviral agent ribavirin only approved treatment
  - Efficacy and use are controversial
- Prophylactic infusions with Respiratory Syncytial Virus Immune Globulin (RSV-IGIV, Human)

Introduction of Palivizumab

- First monoclonal antibody for the prevention of disease
- Prophylaxis results in:
  - 55% decrease in hospitalization due to RSV
  - 78% decrease in RSV hospitalization for infants without BPD
  - 39% decrease in RSV hospitalization for infants with BPD

Introduction of Palivizumab

- Prophylaxis results in:
  - Fewer total RSV hospital days
  - Fewer RSV hospital days on supplemental oxygen
  - Lower incidence of ICU admission
- Safe and well tolerated with no significant reported adverse effects

Palivizumab Regimen

- Monthly administration of medication
- Dose of 15 mg/kg by intramuscular injection
- Provided during anticipated high RSV season:
  - October through March

High-Risk Infant Inclusion Criteria

- Infants with CLD up to 2 yrs with medical intervention within 6 months
- Infants born up to 28 wk EGA without CLD if less then 12 months at onset of RSV season
- Infants born between 28-32 wk EGA if less then 6 months at onset of RSV season
- Infants born between 32-35 wk EGA if less then 6 months at onset of RSV season and increased risk factor for infection

High-Risk Infant Inclusion Criteria

- Selected factors that increase RSV disease severity:
  - prematurity
  - chronic lung disease
  - male sex
  - congenital heart disease
  - low socioeconomic status
  - T-cell immunodeficiency

EACH Synagis Clinic

- Held monthly from October to March (anticipated)
- Located in Carson Care Clinic
- Contact Janet Meuth or LTC Chandler with patient information

Questions

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